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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,687	04/14/2004	Joseph W. Tsang	200316003-1	8068
<div>7590 08/23/2007 HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, CO 80527-2400</div>			<div>EXAMINER SHOSHO, CALLIE E</div>	
			<div>ART UNIT 1714</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 08/23/2007</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,687

Applicant(s)

TSANG ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 and 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-44 is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/6/07 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. (U.S. 6,087,051) in view of Yacobucci et al. '858 (U.S. 6,312,858) and Thompson et al. (U.S. 6,341,856).

Shoji et al. disclose method of making an overcoating composition or fixative comprising printing the overcoating composition from ink jet printer onto printed ink. Shoji et al. also disclose that the overcoating composition or fixative overcoats the ink and comprises vehicle and polyurethane. Further, Shoji et al. disclose method comprising printing ink from ink jet printer onto recording medium followed by printing the fixative from ink jet printer onto the ink (abstract, col.2, lines 20-25, col.15, lines 42-45, col.16, lines 63-65, and col.19, lines 1-23).

The difference between Shoji et al. and the present claimed invention is the requirement in the claims of (a) two-part system and amount of reactive monomer/polyol and (b) glass transition temperature and melting temperature of the polyurethane.

With respect to difference (a), it is noted that the present claims require method for making a fixative comprising reactive monomer such as isocyanate and second component such

as polyol wherein the fixative is formed by reacting the reactive monomer and second component to form a polymer on the printing medium while Shoji et al. disclose method for making a fixative comprising polyurethane wherein the fixative is formed by printing the polyurethane onto the printed ink. It is well known that polyurethane is formed by the reaction of isocyanate and polyol.

Thompson et al. disclose reacting 2-40% polyisocyanate with polyol and further disclose storing polyol and polyisocyanate in separate reservoirs, i.e. cartridges, in order to prevent premature reaction between the two components (col.5, lines 61-62 and col.6, lines 18-20). It would have been within the skill level of one of ordinary skill in the art to recognize that such premature reaction would result in formation of undesirably high molecular weight or highly crosslinked polymer before printing wherein such polymer would clog the printer nozzles.

With respect to difference (b), Shoji et al. each disclose the use of polyurethane, but do not disclose the glass transition temperature or melting temperature of the polymer.

Yacobucci et al. '858, which is drawn to overcoating composition comprising polyurethane, disclose the use of polyurethane having glass transition temperature of 0-70 °C in order that composition has good film forming properties during coating and drying but which also provides coating with water-resistance, scratch resistance, and fingerprint resistance (col.1, lines 6-10, col.2, lines 59-67, and col.4, lines 1-2).

Thompson et al. disclose that ink jet printers normally operate at temperatures of 50-150 °C (col.10, lines 38-39). Given that the fixative of Shoji et al. is printed using an ink jet printer and further given that in order that the ink be properly ejected from the nozzles of the ink printer the fixative must be in liquid form, it would have been obvious to one of ordinary skill in the art

to use polyurethane which melts at 50-150 °C in order that the fixative can be properly liquefied and ejected from the ink jet printer without clogging the printer nozzle.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to form the fixative disclosed in Shoji et al. by a two-part system wherein polyol and polyisocyanate are kept in separate reservoirs and react on the printing medium to form the polyurethane in order to prevent premature reaction and further it would have been obvious to one of ordinary skill in the art to use polyurethane having glass transition temperature and melting temperature disclosed by Yacobucci et al. '858 and Thompson et al. as described above in order to produce fixative which would producing coating with water resistance, scratch resistance, and fingerprint resistance as well as eject from printer nozzle properly, and thereby arrive at the claimed invention.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. in view of Yacobucci et al. '858 and Thompson et al. as applied to claims 8 and 12-14 above, and further in view of Kurabayashi et al. (U.S. 5,985,975).

The difference between Shoji et al. in view of Yacobucci et al. '858 and Thompson et al. and the present claimed invention is the requirement in the claims of different color inks.

Shoji et al. disclose overcoating an ink composition with fixative. However, there is no disclosure of using the fixative with a set of different color inks as presently claimed.

Kurabayashi et al. disclose using fixative with a set of inks including yellow, cyan, magenta, and black inks (col.3, lines 23-25 and col.14, lines 5-7) in order to produce a multicolor image.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use fixative of Shoji et al. with set of different color inks in order to produce multicolor image, and thereby arrive at the claimed invention.

6. Claims 8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yacobucci et al. '858 (U.S. 6,312,858) in view of Yacobucci et al. '101 (U.S. 6,268,101) and Thompson et al. (U.S. 6,341,856).

Yacobucci et al. '858 disclose method for making a fixative comprising polyurethane wherein the fixative is formed by printing the polyurethane onto the printed ink. Yacobucci et al. '858 also disclose overcoating composition or fixative for ink jet printing wherein the fixative overcoats the ink and comprises vehicle and polyurethane possessing glass transition temperature of 0-70 °C wherein the polyurethane is produced by reacting isocyanate with polyol in presence of catalyst. There is also disclosed method comprising printing ink from ink jet printer onto printing medium followed by overcoating with the fixative (col.1, lines 6-10, col.2, lines 59-67, col.3, lines 2-10 and 47-51, col.4, lines 1-6, col.7, lines 8-10, and col.9, line 16-col.10, line 5). Attention is called to col.13, lines 41-46 that disclose polyurethane obtained from approximately 37% polyol and 54.5% diisocyanate. Although there is no explicit disclosure of the melting temperature of the polyurethane, it is well known, as disclosed by Yacobucci et al. '101 that polyurethane obtained from polycarbonate polyol, as is the polyurethane of Yacobucci et al. '858, melts at 70-160 °C and thus, it is clear that the polyurethane of Yacobucci et al. '858 intrinsically possesses melting temperature as presently claimed.

The difference between Yacobucci et al. '858 and the present claimed invention is the requirement in the claims of two-part system.

It is noted that the present claims require method of making a fixative that comprises a reactive monomer such as isocyanate and second component such as polyol wherein the reactive monomer and second component react to form a polymer on the printing medium while Yacobucci et al. '858 disclose method for making a fixative comprising polyurethane wherein the fixative is formed by printing the polyurethane onto the printed ink. It is well known that polyurethane is formed by the reaction of isocyanate and polyol.

Thompson et al. disclose reacting 2-40% polyisocyanate with polyol and further disclose storing polyol and polyisocyanate in separate reservoirs or containers in order to prevent premature reaction between the two components (col.5, lines 61-62 and col.6, lines 18-20). It would have been within the skill level of one of ordinary skill in the art to recognize that such premature reaction would result in formation of undesirably high molecular weight or highly crosslinked polymer before printing.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to form the fixative disclosed in Yacobucci et al. '858 by a two-part system wherein polyol and polyisocyanate are kept in separate containers and react on the printing medium to form the polyurethane in order to prevent premature reaction, and thereby arrive at the claimed invention.

7. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yacobucci et al. '858 in view of Yacobucci et al. '101 and Thompson et al. as applied to claims 8 and 12-14 above, and further in view of Kurabayashi et al. (U.S. 5,985,975).

The difference between Yacobucci et al. '858 in view of Yacobucci et al. '101 and Thompson et al. and the present claimed invention is the requirement in the claims of different color inks.

Yacobucci et al. '858 disclose overcoating an ink composition with fixative. However, there is no disclosure of using the fixative with a set of different color inks as presently claimed.

Kurabayashi et al. disclose using fixative with a set of inks including yellow, cyan, magenta, and black inks (col.3, lines 23-25 and col.14, lines 5-7) in order to produce a multicolor image.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use fixative of Yacobucci et al. '858 with set of different color inks in order to produce multicolor image, and thereby arrive at the claimed invention.

Response to Arguments

8. Applicants' arguments filed 6/6/07 have been fully considered, however, they are not persuasive.

Specifically, applicants argue that Thompson et al. is not a relevant reference against the present claims given that Thompson et al. require the use of blocking agent which is outside the scope of the present claims which now recite "consisting essentially of" transitional language with respect to the method.

While it is agreed that col.4, lines 19-27 pointed by applicants discloses the use of blocking agents, attention is drawn to col.5, lines 63-67 of Thompson et al. that disclose that the functional groups "may be" protected by chemical blocking with blocking agents and to col.7,

lines 6-7 of Thompson et al. that discloses that chemical blocking agents “may be used” to prevent premature reaction of the polyisocyanates and the polyols. Thus, it appears that while in one embodiment, blocking agents are required; in another embodiment they are not. Given that Thompson et al. do not require the use of blocking agents, it is the examiner’s position that Thompson et al. remains a relevant reference against the present claims.

It is further noted that even when the blocking agent is present, it is the examiner’s position that Thompson et al. remains a relevant reference against the present claims for the following reasons.

On the one hand, while the present claims have been amended to recite “consisting essentially of” with respect to the method, it is noted that the present claims still recite open language, i.e. “comprising”, with respect to the first and second container. In light of this open language, it is clear that the first and/or second container is open to the inclusion of additional ingredients including blocking agents.

On the other hand, in the previous amendment filed 12/21/06, applicants argued that due to the presence of blocking agents, Thompson et al. require heating step to remove the blocking groups.

However, while it is recognized that the phrase “consisting essentially of” narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, “consisting essentially of” is construed as equivalent to “comprising”. Further, the burden is on the applicant to show that the additional method steps in the prior art, i.e. removal of blocking groups by heating, would in fact be excluded from the claims and that

such ingredients would materially change the characteristics of the applicant's invention, See MPEP 2111.03. Thus, absent evidence that the removal of the blocking agents would in fact be excluded from the present claims, it is the examiner's position that Thompson et al. remains a relevant reference against the present claims.

Allowable Subject Matter


9. Claims 23-44 are allowable over the "closest" prior art Shoji et al. (U.S. 6,087,051), Yacobucci et al. '858 (U.S. 6,312,858) and Thompson et al. (U.S. 6,341,856) given that there is no disclosure or suggestion in any of the references of fixative comprising a two-part system consisting essentially of at least one reactive oligomer comprising at least one epoxy-terminated oligomer and at least one second component comprising at least one polyol plus at least one basic catalyst as required in present claims 23-29, no disclosure or suggestion of method of printing on a print medium including printing ink onto medium followed by depositing the fixative on the ink the method comprising providing first container containing at least one first reactive component comprising at least one epoxy-terminated oligomer as required in present claims 30-37 and no disclosure or suggestion of combination of ink jet ink and two-part fixative including at least one reactive oligomer comprising at least one epoxy-terminated oligomer and at least one second component comprising at least one polyol plus at least one basic catalyst as required in present claims 38-44.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
8/20/07